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Conscious recollection and executive function in patients with schizophrenia

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Background

Dual process models propose that recognition memory (RM) involves two processes: conscious recollection and familiarity aware memory (but not recall). Studies investigating RM in schizophrenia report a selective deficit in conscious recollection and intact levels of familiarity-driven RM for stimuli presented in the visual and olfactory domains. It has been suggested that abnormalities in conscious recollection result from a breakdown in frontal strategic memory processes involved in encoding and retrieval and executive functions linked to reality monitoring and decision making. We investigated three predictions arising from these proposals. Firstly, if conscious recollection abnormalities arise from a central impairment, then these abnormalities should not be domain-specific. Secondly, if the deficits in conscious recollection arise from a breakdown in executive processes, deficiencies should be correlated with executive dysfunction. Finally, the conscious recollection deficiencies are likely to be more severe in Schizophrenia, a condition associated with marked executive dysfunction relative to Major Depressive Disorder, Recurrent (MDDR), in which executive dysfunction is less marked.

Methods

The *remember/know* paradigm was used to investigate RM for voices in three groups: patients with schizophrenia (n = 14), patients with MDDR (n = 16) and normal controls (n = 16). Executive function was assessed using the Wisconsin Card Sorting Test.

Results

Patients with schizophrenia made significantly fewer *remember* responses than normal controls ($P < 0.01$), despite normal levels of discrimination and familiarity driven auditory RM. Patients with MDDR did not differ significantly from either normal controls or patients with schizophrenia. Executive dysfunction was limited to the schizophrenia group, and was not correlated with conscious recollection deficiencies.

Conclusions: Patients with schizophrenia exhibit a deficit in conscious recollection for auditory RM of voices. These findings, when considered alongside *remember/know* data collected from the same set of patients for olfactory and visual RM, supports proposals that abnormalities in conscious recollection stem from a breakdown in central rather than domain-specific processes.